

Palms, 43(3), 1999, pp. 122–129

Products Derived from Palms at the Puerto Ayacucho Markets in Amazonas State, Venezuela

A. NARVÁEZ,* AND F. STAUFFER**

Fundación Instituto Botánico de Venezuela, Apartado 2156, Caracas 1010-A, Venezuela

Tel.: (58-2) 605.3968. Fax: (58 2) 605.3970.

*E-mail: * narvaez@melot.rect.ucv.ve ** stauffer@facilnet.com*

ABSTRACT

Due to the nutritive value, importance in the commerce of other non-palm products, and the high quality of the manufactured articles, a description of the uses of nine species of palms circulating among the two main markets of the city of Puerto Ayacucho in the State of Amazonas, Venezuela are reported. Information about the origin and commercialization of the palm products is also included. Three important uses for different parts of the palms were identified: food, handicraft and medicine. The fruits of seven species and the leaves of three species are used. At least four indigenous groups (Piaroa, Curripaco, Guahibo and Baniva) from 10 neighboring communities, include palm products in the economic support of their families.

Key words: Palms, Arecaceae, Market, Ethnobotanic, Puerto Ayacucho, Amazonas, Venezuela

The city of Puerto Ayacucho, municipality of Atures, is the capital of the State of Amazonas, Venezuela. It is found near the north section of the State near the Orinoco River, the main river of Venezuela. The municipality of Atures has the highest population density, reports 48.4% of the indigenous population of the State (OCEI, 1993), and has the highest commercial activity for the State.

The city has two central markets, which have their main commercial activity on Saturdays when the neighboring indigenous groups come to sell their goods. One of the markets sells fresh and processed food to the residents and neighboring communities of Puerto Ayacucho. The other market is mainly folkloric, sells herbal remedies and handicrafts, and is important for regional and national tourism. The palm products sold in both markets are an excellent commercial resource, which additionally represent the culinary art and craftsmanship of indigenous groups living near the city.

The palms play a very important role in the

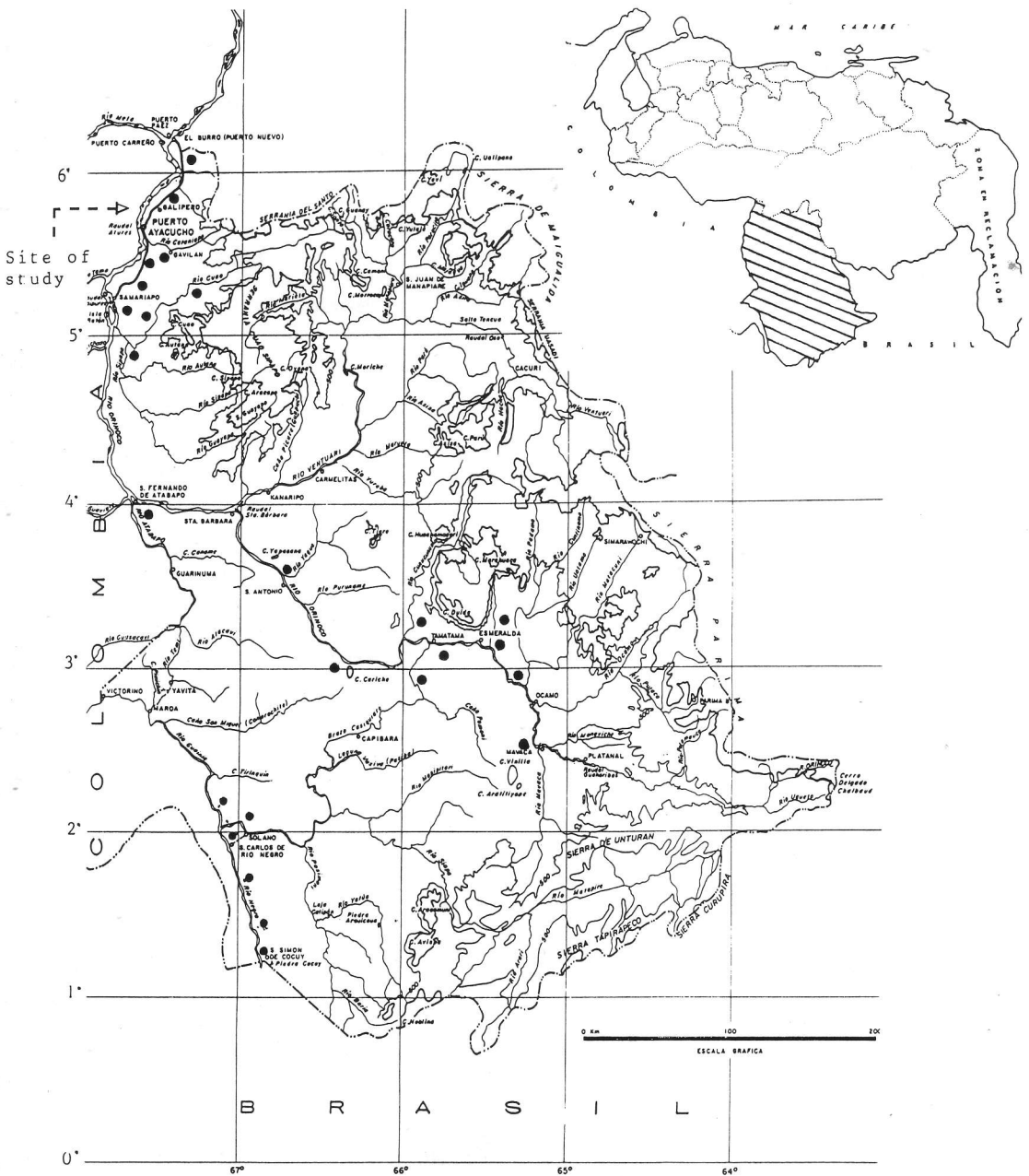
lives of many native societies of the tropics, providing food, dress, shelter, and so forth (Balick 1986). In the markets of Puerto Ayacucho, the commercial activity with palms is an important part of the economic earnings of many indigenous families. Melnik (1995) reported the commercialization of at least two species of palms, Seje (*Oenocarpus* sp.) and Moriche (*Mauritia flexuosa*), in the markets of Puerto Ayacucho. These generate income sufficient to satisfy some of the basic needs of the families Huottuja (Piaroa). Mejía (1992), in other markets of the Amazonia, identified 19 palms in Iquitos, Peru and Kahn (1997) pointed out the presence of *Astrocaryum aculeatum*, *Astrocaryum chambira* and *Mauritia flexuosa* in two markets of the Amazon basin.

Methods

This study was carried out during five visits to the two main markets of Puerto Ayacucho between January 1997 and July 1998. Each of the visits included interviews with the market's merchants, the inhabitants of the city, and the neighboring indigenous communities to compile information on the origin of the, their uses, methods of preparation, and cost. The taxonomic identification of species was made using the keys proposed by Henderon (1995) and Kahn (1997), and the revision of botanical specimens deposited at MY, MYF, NY, TFAV, US, and VEN. Field collections and additional ethnobotanic observations were carried out in several other localities throughout the State (Fig. 1).

Results

In this study nine species of palms are reported, parts of which are directly commercialized for human consumption and constitute the raw mate-



1. Map. Localities where botanical specimens were collected.

rial in the manufacture of handicrafts, and indirectly contribute to the selling of other products.

The uses, common names, methods of preparation, prices (when available) and the period of availability presented for each of the nine species. Additional information about uses and common

names were taken from herbarium specimens and literature searches for the same palms reported from other regions of Venezuela (Table 1).

***Astrocaryum jauari* Mart.**

C.N.: Albarico

Table 1. Other reported uses and common names given to the studied species

| Species | Uses | Common names |
|---|--|--|
| <i>Astrocaryum jauari</i> | In the Amazonas basin, the fruit is used as bait for fishing (Stauffer et al. 334, 476-VEN). The Pumé Indians use the fiber from the leaves to weave baskets and bags (Gragson 1992). | Kiajuara (Gentry and Stein 47325-NY). |
| <i>Attalea butyracea</i> | In Cojedes, the oil extracted from the fruits is used to fortify the hair of men and animals and the stems to build corrals and bridges (Delascio 11710-VEN). In Barinas, the pulp of fruits is eaten by hogs and the leaves used for roof (Ramia 1669-VEN). In the upper Orinoco River, the Yanomamis eat the fruit after boiling it. | Yagua, Corozo (Cojedes State) (Delacio and López 11710-VEN). |
| <i>Attalea maripa</i> | In Bolivar, the fruit is eaten boiled and with the flour, a flat bread (<i>arepa</i>) is made (Stauffer et al. 274-VEN). In Amazonas, from the crushed and boiled seed semi-solid whitish grease is obtained which is used for medicines. Mixed with vegetable pigments or minerals, it serves as a base for paint the indians use in their bodies. The oil also serves as a fuel for burners. In the upper Orinoco a starch from the mesocarp is obtained to make cakes (Civrieux 1957; Braun and Delascio 1987). The Yanomamis eat the raw fruit (Fuentes 1980). The big peduncular bracts serves as toys for children (Civrieux 1957). | Careshi (Yanomami) (Stauffer et al. 274-VEN), Wasai (Yekuana, Bolívar state) (Goldstein and Salas 328-VEN), Mabaco (Piapoco) (Braun and Delascio 1987) |
| <i>Bactris gasipaes</i> | The wood from the trunk is used when the palm becomes sterile and the shoot is edible (Braun and Delascio 1987). The Yekuana use the wood to make bows (<i>haia</i>) and the epicarp is used to sweeten the <i>yarake</i> (fermented drink made with <i>Manihot esculenta</i>) (Delascio 1992). The Venezuelan and Brazilian Yanomamis celebrate the harvest of Pijiguao with dances and a thick drink made from the fruit (Patiño (1992). In the Venezuelan Amazonas, the liquid extracted from the fruits is used as an astringent (Braun and Delascio 1987). When there is no pottery for cooking, the fruits are roasted (Civrieux 1957). | Pijiwao (Wessels-Boer 2252-NY), Jijiri, Fhi-hidi, Lasha (Yekuana) (Braun and Delascio 1987; Delascio 1992). Raxa (Yanomami) (Fuentes 1980). |
| <i>Euterpe precatoria</i> var. <i>precatoria</i> | Occasionally boards are obtained from the trunk. The fruits are used to prepare a refreshing drink (Stauffer et al. 286, 306, 328, 475-VEN). The heart of the palm is edible (Holst and Liesner 2710-VEN). With the ashes of the leaves the Pumé Indians from the southwest Venezuela, in Apure, prepare <i>paramán</i> a substance used to seal, tie and make many products waterproof (Gragson 1992). | Nenea (Piaroa) (Stauffer et al. 286, 306, 328, 475-VEN). Wa-hu (Steyermark 107188-NY). Wahima (Yanomami) (Salaroli and Rucci 7-NY). |
| <i>Leopoldinia piassaba</i> | The fiber is used to make handicrafts (Stauffer et al. 391-VEN). The threads from the petioles are very resistant to water, flexible, and long-lasting; because of this, they are used to make ropes, brooms, collars, and brushes to clean budares, bracelets, hammocks, carpets and, mats (Braun and Delascio 1987). The leaves are also used for thatching roofs (Henderson 1997). | Marama, Madama (Yekuana) (Delascio 1992) |
| <i>Mauritia flexuosa</i> | The leaves are used for thatching, the fiber resulting from the first partly grown leaf, is used to make handicrafts. From the fruit a paste is made to produce a refreshing drink. Old stems shelter the beetle larvae of (<i>Rynchophorus palmarum</i>) which is | Kuia (Yekuana), Eteweshi (Yanomami), (Braun and Delascio 1987); Cuhuai (Yekuana) (Delascio 1992). |

Table 1. Continued

| Species | Uses | Common names |
|--|--|--|
| | eaten by the Yanomamis due to its high fat content. The fruits are eaten raw or cooked. When they are too ripe the Waraos Indians of the Orinoco Delta crush the fruit to obtain a paste, <i>ojiguari</i> , a kind of cheese that lasts a few days (Braun and Delascio 1987). Starting from the seeds a thick drink or <i>carato</i> is prepared (Braun and Delascio 1987). The heart of this palm is consumed by the Pumé Indians from Apure State (Gragson 1992). | |
| <i>Oenocarpus bacaba</i> | The epidermis of the leaf sheath is used to make cigars (Braun and Delascio 1987). The leaves are used for thatching (Henderson 1997). From the fruits alcoholic and refreshing drinks are prepared, and also a good edible oil (Berry 791-VEN; Braun and Delascio 1987). The pulp from the fruit crushed and mixed with water, produces an emulsion which is drunk with coffee instead of milk (Braun 1997) | Palma de vino, Macaba (Yanomami) (Braun and Delascio 1987). Kujedi (Yekuana, Bolívar State) (Goldstein and Salas 343-VEN). |
| <i>Oenocarpus bataua</i> var. <i>bataua</i> | The leaf rachis is used to make arrows for hunting and the trunk is used to make bows (Braun and Delascio 1987). The oil that comes from the fruit is used against asthma and to cure skin irritation and diseases (Stauffer et al. 382-VEN), and Guánchez (1996) points out that this oil is used as an antidote to the bite of poisonous animals. The medicinal oil also has culinary uses (Williams 14345-VEN). The fruits soaked in water for several days produce a very palatable strong drink (Braun and Delascio 1987) that is nutritious (Berry 2133-VEN). From the fruit, a starch is obtained which is used in confectionery. The seeds in decoction, crushed and emulsified in water are used to prepare a <i>carato</i> which is very nutritious. The seeds can be eaten raw (Civrieux 1957). | Kudai (Yekuana, Bolívar State) (Goldstein and Salas 342-VEN). |

Use: Handicraft (fruit)

The hard endocarp is employed for carving figures, necklaces and rings, which are sold in markets and handicraft stores in the city. The products are available year round.

Attalea butyracea (Mutis ex L. f.) Wess. Boer

C.N.: Coroba

Use: Food (fruit)

The fruit is boiled with salt until it is soft. The epicarp is discarded and the mesocarp and endosperm are eaten. Another method of preparation is to boil it, peel off its cover, and leave it to dry in the sun. It is grated into flour, and dried again on a *budare* (baking pan). The flour is kept in cans. This flour can be consumed dried or mixed with water. A dough can also be prepared to make *arepas* (flat bread) which is cooked on a *budare*. It is usually scarce in the market. However, it was seen in February (Fig. 2).

Attalea maripa (Aubl.) Mart.

C.N.: Cucurito

Use: Handicraft (leaves)

The leaves of this palm play an important commercial role in the market. Its leaves are woven to make *catumares* (bags used for carrying products by the local indigenous populations) and to wrap smoked fish (Fig. 3). It is available throughout the year.

Bactris gasipaes Kunth

C.N.: Pijiguao

Use: Food (fruit)

The fruit is boiled for 10 minutes, the epicarp discarded, and the mesocarp eaten. The whole infructescences are also sold in the market (Fig. 4). They are boiled and wrapped in *tirite* (*Ischnosiphon* sp.) leaves. The raceme is sold for about \$3.57 (2.000 Bs.), however, its price directly depends on size and abundance. A package (1



2. Fruits of Coroba (*Attalea butyracea*).



3. Leaves of Cucurito (*Attalea maripa*) wrapping smoked fish.

kg) with fruits costs \$0.71 (400 Bs.) (Fig. 5). They are available from February to May.

***Euterpe precatoria* var. *precatoria* Mart.**

C.N.: Manaca montañera var.

Use: Food (fruit)

The fruits are boiled for 10 minutes, drained, crushed, mixed with water and strained. This beverage can be served hot or cold with or without sugar, and can be accompanied with *mañoco* (*Manihot esculenta* flour). The fresh fruits are sold for \$0.44–0.53 per kg (250–300 Bs.), and are available from June to September (Fig. 6).

***Leopoldinia piassaba* Wallace**

C.N.: Chiqui-chiqui

Use: Handicraft (leaves)

The fibers from the petioles and the leaf sheaths are very resistant and are used to make mats, brooms, brushes, ropes, etc. (Fig. 7). The prices depend on the size and quality of the products. The products are available throughout the year.

***Mauritia flexuosa* L. f.**

C.N.: Moriche

Use: Food (fruit) and handicraft (leaves)

The ripe fruits are collected from the ground. After the pericarp is discarded, the mesocarp is separated from the seed to prepare a paste that can be consumed as a drink mixed with sugar and water. It is also used as an ingredient to make ice cream and other products. At the market the fruits are sold whole. The paste is wrapped in *Ischnosiphon* sp. leaves (Fig. 8). The fresh leaves of the moriche palm are used to wrap bales of *casabe* (bread made of *Manihot esculenta* flour).

The moriche paste is sold in packages of approximately 1 kg at a cost of \$2.67 (1,500 Bs.). At the handicraft market many products from the fiber of leaves and petioles are sold, including bags, handbags, hats, and hammocks. They can cost between \$71.43–80.36 (40,000–45,000 Bs.). The fruit products are sold from April to May, and the crafts are sold throughout the year.



4. The racemes of Pijiguao (*Bactris gasipaes*).

***Oenocarpus bacaba* Mart.**

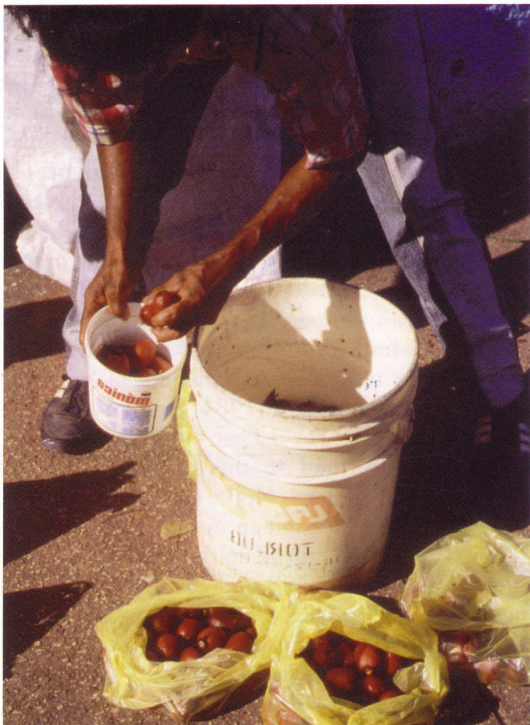
C.N.: Sejito, Seje pequeño

Use: Food (fruit)

The ripe fruits are cooked in water, macerated, and the extracted juice consumed as a drink. Some people report that the oil and juice extract-



6. Fruits of Manaca montañera (*Euterpe precatoria* var. *precatoria*).



5. Fruits of Pijiguao (*Bactris gasipaes*).

ed from the fruits of this palm are higher in quality than those of seje grande (*Oenocarpus bataua* var. *bataua*). The fruits are sold at \$0.89 per kg (500 Bs.), are available from January to May and are less abundant than those of seje grande.

***Oenocarpus bataua* var. *bataua* Mart.**

C.N.: Seje grande.*

Use: Food and medicinal (fruit)

The ripe fruits are cooked in water until soft, the epicarp is discarded and a drink is prepared from the mesocarp. The mesocarp, when ripe, produces oil that can be used for cooking and as a remedy against asthma, flu and tuberculosis. To extract the oil, the fruits are submerged in tepid water until soft. They are immediately taken out of the water and exposed to the sun until the oil is released. Once the oil is released, it is passed through a *sebucan* (a mesh of vegetal fiber), filtered, and bottled. It is sold pure or mixed with honey. The fruit costs between \$0.45—0.89 per

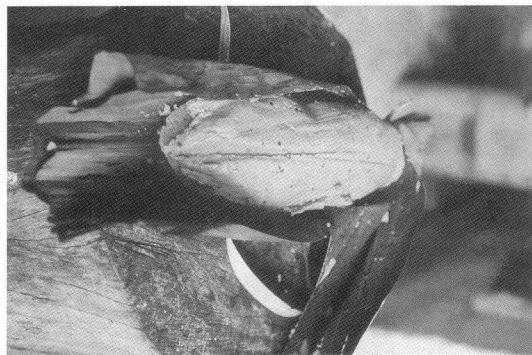


7. Products made from the fiber of Chiqui-chiqui (*Leopoldinia piasaba*).

kg (250—500 Bs.). A bottle of seje oil (1.5 liter), can cost between \$5.66—7.54 (3.000—4.000 Bs.). The fruits were observed in the market between April and September. In the handicraft market, bottles of seje grande oil are present all year-round (Fig. 9).

Origin of the Products

The food products, most of them perishable, come from at least 10 indigenous communities near Puerto Ayacucho city: Agua Blanca, Cucurital, Gavilan, Las Pavas, Parhueña, Paria, Pintado, Platanillal, Rueda and Sipapo. Occasionally, some products such as seje oil and handicrafts made from leaves of palms, arrive at Puerto Ayacucho, thanks to a cooperative organization situated in San Juan de Manapiare (180 km southeast of Puerto Ayacucho). This cooperative receives manufactured products made by Piaroa communities established along the Manapiare and Marieta rivers. Goods also arrive from Chaguachinoto



8. Paste of fruits of Moriche (*Mauritia flexuosa*) wrapped in *Ischnosiphon* sp.

village located along the upper Suapure River (between Bolívar and Amazonas States). The highest number of palm products comes from the Piaroa and to a lesser degree from Curripaco, Guahibo, and Baniva groups. The Baniva are originally from the Rio Negro basin and later moved to northern Amazonas.

Discussion

From the start of this investigation the importance of the products of the Arecaceae family in the markets of Puerto Ayacucho was evident, not only because of their great variety but also, for their abundance. In this sense, Melnik (1995), in her work on edible forest products of Amazonas State, pointed out the uses and methods of preparation of fruits for some palms species. She also said that on one Saturday, she observed 34 indigenous people selling manaca (*Euterpe precatoria* var. *precatoria*) and 14 selling seje (*Oenocarpus bataua* var. *bataua*).

Similar studies in other markets of the Amazonas basin report a great variety of products made from palms. Berg (1984) found 10 species in the market of Ver-o-Peso in Brazil. Four of those are described in this study. Of the 19 species identified by Mejía (1992) in Iquitos, Peru, five were present in our study. The three species common in these markets, and which are therefore of great importance to the economy and nutrition of the people of northern Amazonas, were the moriche palm (*Mauritia flexuosa*), the pijiguao (*Bactris gasipaes*), and the seje (*Oenocarpus bataua* var. *bataua*).

This study identified three categories of utilization of the products, which are in order of im-



9. Bottles of Seje grande oil (*Oenocarpus bataua* var. *bataua*).

portance: food, handicrafts, and medicine. The fruit in most cases are sold fresh. It is the part used most often, being utilized in six species as food (mainly the mesocarp), one species for handicraft and another species for medicine. As in the markets of Brazil and Peru, in the Puerto Ayacucho markets the palm fruits represent the most economically important products available throughout the year. These results demonstrate the importance of this plant family. Palms are part of the diet of many communities in Amazonas and are a source of income for many indigenous groups of the region.

Acknowledgments

We thank Dr. Kember Mejía (Instituto de Investigaciones de la Amazonia Peruana), and Alfredo Gómez-Beloz (NYBG) for revision of the manuscript. Assistance was provided by Emigdio Melgueiro, Luis Alvarez, and Carlos Gómez in the field. This project was partially financed by the Deutsche Gesellschaft für Technische Zusammenarbeit (GTZ).

LITERATURE CITED

- BALICK, M. J., 1986. Systematics and economic Botany of the *Oenocarpus-Jessenia* (Palmae) complex. *Adv. Econ. Bot.* 3: 1-140.
- BERG, M. E. VAN DER, 1984. Ver-o-Peso: The ethnobotany of an Amazonian market. *Adv. Econ. Bot.* 1: 140-149.
- BRAUN, A. 1997. La Utilidad de las Palmas en Venezuela. Fundación Thomas Merle. Litopar C. A. Caracas. Venezuela.
- BRAUN, A. AND F. DELASCIO. 1987. Palms autóctonas de Venezuela y de los países adyacentes. Litopar C.A. Caracas. Venezuela.
- CIVRIEUX, MARC DE. 1957. Nombres folklóricos e indígenas de algunas palmeras Amazónico-Guayanesa con apuntes etnobotánicos. *Bol. Soc. Venez. de Ciencias Nat.* tom. XVIII, n° 89.
- DELASCIO, F. 1992. Vegetación y etnobotánica del valle de Culebra, estado Amazonas, Venezuela. *Acta Terramaris* 5: 1-42.
- FUENTES, E. 1980. Los Yanomami y las plantas silvestres. *Antropologica* 54: 3-138.
- GRAGSON, T. 1992. The use of palms by the Pume indians of southwestern Venezuela. *Principes*. 36(3): 133-142.
- GUÁNCHEZ, F. 1996. Plantas del uso medicinal, mágico y psicotrópico del Estado Amazonas, Venezuela. Mimeografiado. Caracas. Venezuela.
- HENDERSON, A. 1995. The Palms of the Amazon. Oxford University Press, Inc., New York, NY. USA. 362 p.
- HENDERSON, A. 1997. Arecaceae. In: Flora of the Venezuelan Guayana (J. A. Steyermark, P. E. Berry and B. K. Holst, eds.). Vol. 3: 32-122. Missouri Botanical Garden. St. Louis, MO. USA
- KAHN, F. 1997. The palms of Eldorado. Orstom Editions, Editions Champflour, The International Palm Society. Lawrence, KS, USA.
- MEJÍA, K. 1992. Las palmeras de los mercados de Iquitos. *Bull. Inst. fr. études andines*. 21(2): 755-769.
- MELNIK, M. 1995. Productos forestales comestibles: Una oportunidad para el desarrollo sustentable. Pp. 295-310. In: Carrillo, A. y M. Perera. Amazonas Modernidad en Tradición. Contribución al desarrollo sustentable en el Estado Amazonas, Venezuela. GTZ, SADA Amazonas, CAIAH.
- OCEI. 1993. Censo indígena de Venezuela 1992. Tomo II. Oficina Central de Estadística e Informática, Caracas. Venezuela.
- PATIÑO, V. 1992. Ethnobotany of *Bactris gasipaes*. *Principes*. 36(3): 143-147.

Left

Trachycarpus martianus grows in great quantity in the Marsyangdi Valley in Nepal. It is abundant on precipitous slopes up to an altitude of 2000 m, although it can be difficult to observe from the path as local people have long since made use of accessible individuals. In the village of Tal, below which this photo was taken, we made camp on the local football pitch where the trunks of *Trachycarpus* are used as goal posts.—Bill Baker

Right

Satranala decussilvae growing in primary forest on the Masoala Peninsula. Photo: Andrew McRobb (Copyright Royal Botanic Gardens Kew). See pp. 145-148.